THE REARRANGEMENT OF 2-CHLOROISOPROPYL PHENYL SULFIDE

BY

JOHN HENRY KOEHNEKE

B.A., Kalamazoo College, 1943
M.S., Kalamazoo College, 1945

AN ABSTRACT OF A THESIS

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
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ACKNOWLEDGMENT

The author wishes to express his appreciation to Professor Reynold C. Fuson for his advice and encouragement during this investigation.

The author is also grateful to the Upjohn Company for scholarships during the academic years, 1946-1947 and 1947-1948.

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Introduction

Certain alkyl 2-hydroxyisopropyl sulfides have been found to yield alkyl 2-chloro-*n*-propyl sulfides instead of the expected isopropyl sulfides when the hydroxyl group is replaced by chlorine. A three-membered cyclic sulfonium ion has been proposed as the intermediate in the rearrangement (1). The present investigation extends the information on this rearrangement to aryl 2-chloroisopropyl sulfides.

Discussion Of Results

2-Hydroxyisopropyl phenyl sulfide yielded 2-chloro-*n*-propyl phenyl sulfide when treated with thionyl chloride. The structure of the product was shown by oxidation of the chloro sulfide to the chloro sulfone, hydrolysis of the chloro sulfone to the hydroxy sulfone, and treatment of the hydroxy sulfone with 3,5-dinitrobenzoyl chloride. The product, isolated in 15% yield starting from the chloro sulfone, was found to be identical with the 3,5-dinitrobenzoate of 2-hydroxy-*n*-propyl phenyl sulfone.

Treatment of the chloro sulfide with the sodium *p*-nitrobenzoate or partial hydrolysis followed by treatment with *p*-nitrobenzoyl chloride gave a product which was identical with the *p*-nitrobenzoate of 2-hydroxy-*n*-propyl phenyl sulfide.

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VITA

The author was born in Chicago, Illinois, on August 9, 1921. He attended the parochial and public schools of Des Plaines, Illinois, and was graduated from Maine Township High School in June, 1939. From September, 1939, to June, 1940, he studied at Valparaiso University. The following September he transferred to Kalamazoo College. He attended Northwestern University in the summer of 1942, and received the degree of Bachelor of Arts from Kalamazoo College in May, 1943. From February to September, 1943, he held a teaching assistantship while attending the Graduate School of Michigan State College. He then returned to Kalamazoo College as a full-time assistant in chemistry in the Army Specialized Training Program. In April, 1944, he resumed graduate study at Kalamazoo College and was granted the degree of Master of Science in June, 1945. During this period he held an Upjohn Company Scholarship. He was employed as a research chemist by the Upjohn Company from February to September, 1945, when he entered the Graduate College of the University of Illinois. He held teaching assistantships until August, 1948. He also held Upjohn Company Scholarships from September, 1946, to June, 1947, and from September, 1947, to June, 1948.